APPENDIX B

DECLARATION OF INVENTOR BRADLEY C. LOVE

I, Bradley C. Love, of Austin, Texas, am the inventor for application 09/686,112, the "Method and Apparatus for Incorporating Decision Making into Classifiers." I am an assistant professor at the University of Texas at Austin in the Center for Computation and Cognitive Processes, with a Ph.D. in Cognitive Psychology and a B.S. in Cognitive and Linguistic Sciences. I have worked in the area of computer science and cognitive processes for over 10 years, with numerous grants and publications in the field. I do hereby declare the following:

A Vector is not the most natural way to represent the subject matter of the present application. The system state of the present application is not confined to values that are known and unknown. Many cases require searching for the next test by navigating a matrix structure for situations in which there are test dependencies. The state of the search process is thus part of the system state. Additionally, the complete state of the model could encompass the above, plus the specification of the classifier, the implicit system, and explicit system.

With regard to the use of the word "mimic," the notion of a learning model coming to approximate, estimate, or mimic some underlying function is accepted in machine learning and statistics. For example, gradient descent models, such as error-minimizing neural networks, come to approximate or mimic an underlying function over

the course of learning. In the present application, the function being approximated is the one defined by the input/output mapping of the explicit system. What constitutes a sufficient approximation or adequate mimicry cannot be defined outside of the context of a specific application and evaluation metric. Each application will have different costs associated with gathering training data, making timely predictions, and making errors. All of these factors (and more) affect what is adequate mimicry. Matching the outputs of a system 60% of the time may be adequate in some situations, whereas matching 99.9% may be inadequate for other applications. In cases where time is of the essence and the explicit system cannot respond fast enough, any prediction may be desirable. Learning theoreticians working in the PAC (Probably Approximately Correct) learning framework formally specify the probability that an estimation will fall outside certain error bounds given a certain number of training examples for certain classes of problems, but these analyses are not applicable to many practical situations, nor do they dictate what the bounds should be (as discussed above).

Bradley C. Love, Inventor

4/21/04

Date